RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/927,738

DATE: 12/20/2001
TIME: 08:55:03

Input Set : **A:\initialseq.ST25.txt**
Output Set: **N:\CRF3\12192001\I927738.raw**

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   3 <110> APPLICANT: Wang, Tongwen
   5 <120> TITLE OF INVENTION: Compposistions and Methods of modulating TGF-B Signaling
   7 <130> FILE REFERENCE: 17633/1082
C-->  9 <140> CURRENT APPLICATION NUMBER: US/09/927,738
  10 <141> CURRENT FILING DATE: 2001-08-10
  12 <150> PRIOR APPLICATION NUMBER: US 60/119786
  13 <151> PRIOR FILING DATE: 1999-02-11
  15 <150> PRIOR APPLICATION NUMBER: PCT/US00/03561
  16 <151> PRIOR FILING DATE: 2000-02-11
  18 <160> NUMBER OF SEQ ID NOS: 28
  20 <170> SOFTWARE: PatentIn version 3.1
  22 <210> SEQ ID NO: 1
  23 <211> LENGTH: 277
  24 <212> TYPE: PRT
  25 <213> ORGANISM: Unknown
  27 <220> FEATURE:
  28 <223> OTHER INFORMATION: Isolated using yeast two hybrid system, Clone S1 + 27
  30 <400> SEQUENCE: 1
  32 Lys Ser Ser Pro Leu Leu Ile Arg Met Glu Glu Ser Leu Asn Ile Val
  33 1               5                  10                  15
  36 Lys Tyr Thr Ala Phe Leu Tyr Asn Asp Gln Leu Ile Trp Ser Gly Leu
  37              20                  25                  30
  40 Glu Gln Asp Asp Met Arg Ile Leu Tyr Lys Tyr Leu Thr Thr Ser Leu
  41          35                  40                  45
  44 Phe Pro Arg His Ile Glu Pro Glu Leu Ala Gly Arg Asp Ser Pro Ile
  45      50                  55                  60
  48 Arg Ala Glu Met Pro Gly Asn Leu Gln His Tyr Gly Arg Phe Leu Thr
  49 65                  70                  75                  80
  52 Gly Pro Leu Asn Leu Asn Asp Pro Asp Ala Lys Cys Arg Phe Pro Lys
  53              85                  90                  95
  56 Ile Phe Val Asn Thr Asp Asp Thr Tyr Glu Glu Leu His Leu Ile Val
  57              100                 105                 110
  60 Tyr Lys Ala Met Ser Ala Ala Val Cys Phe Met Ile Asp Ala Ser Val
  61          115                 120                 125
  64 His Pro Thr Leu Asp Phe Cys Arg Arg Leu Asp Ser Ile Val Gly Pro
  65      130                 135                 140
  68 Gln Leu Thr Val Leu Ala Ser Asp Ile Cys Glu Gln Phe Asn Ile Asn
  69 145                 150                 155                 160
  72 Lys Arg Met Ser Gly Ser Glu Lys Glu Pro Gln Phe Lys Phe Ile Tyr
  73              165                 170                 175
  76 Phe Asn His Met Asn Leu Ala Glu Lys Ser Thr Val His Met Arg Lys
  77              180                 185                 190
  80 Thr Pro Ser Val Ser Leu Thr Ser Val His Pro Asp Leu Met Lys Ile
  81          195                 200                 205
  84 Leu Gly Asp Ile Asn Ser Asp Phe Thr Arg Val Asp Glu Asp Glu Glu
  85      210                 215                 220
  88 Ile Ile Val Lys Ala Met Ser Asp Tyr Trp Val Val Gly Lys Lys Ser
```

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Input Set : **A:\initialseq.ST25.txt**
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```
89  225                     230                     235                     240
92  Asp Arg Arg Glu Leu Tyr Val Ile Leu Asn Gln Lys Asn Ala Asn Leu
93              245                     250                     255
96  Ile Glu Val Asn Glu Val Lys Lys Leu Cys Ala Thr Gln Phe Asn Asn
97              260                     265                     270
100 Ile Phe Phe Leu Asp
101             275
104 <210> SEQ ID NO: 2
105 <211> LENGTH: 543
106 <212> TYPE: PRT
107 <213> ORGANISM: Unknown
109 <220> FEATURE:
110 <223> OTHER INFORMATION: Clone S1 + 28 protein
112 <400> SEQUENCE: 2
114 Phe Ala Val Asp Ala Lys Ala Leu Pro Gln Asn Lys Pro Arg Pro Leu
115 1               5                   10                  15
118 Thr Gln Glu Glu Ile Ala Gln Arg Arg Glu Arg Ala Arg Gln Arg His
119             20                      25                  30
122 Ala Glu Lys Leu Ala Ala Ala Gln Gly Gln Ala Pro Leu Glu Pro Thr
123             35                      40                  45
126 Gln Asp Gly Ser Ala Ile Glu Thr Cys Pro Lys Gly Asp Glu Pro Arg
127     50                      55                  60
130 Gly Asp Glu Gln Gln Val Glu Ser Met Thr Pro Lys Pro Val Leu Gln
131 65                      70                      75                  80
134 Glu Glu Asn Asn Gln Glu Ser Phe Ile Ala Phe Ala Arg Val Phe Ser
135                 85                      90                      95
138 Gly Val Ala Arg Arg Gly Lys Lys Ile Phe Val Leu Gly Pro Lys Tyr
139             100                     105                     110
142 Ser Pro Leu Glu Phe Leu Arg Arg Val Pro Leu Cys Phe Ser Ala Pro
143             115                     120                     125
146 Pro Asp Gly Leu Pro Gln Val Pro His Met Ala Tyr Cys Ala Leu Glu
147     130                     135                     140
150 Asn Leu Tyr Leu Leu Met Gly Arg Glu Leu Glu Tyr Leu Glu Glu Val
151 145                     150                     155                     160
154 Pro Pro Gly Asn Val Leu Gly Ile Gly Gly Leu Gln Asp Phe Val Leu
155                 165                     170                     175
158 Lys Ser Ala Thr Leu Cys Ser Leu Pro Ser Cys Pro Pro Phe Ile Pro
159                 180                     185                     190
162 Leu Asn Phe Glu Ala Thr Pro Ile Val Arg Val Ala Val Glu Pro Lys
163             195                     200                     205
166 His Pro Ser Glu Met Pro Gln Leu Val Lys Gly Met Lys Leu Leu Asn
167     210                     215                     220
170 Gln Ala Asp Pro Cys Val Gln Ile Leu Ile Gln Glu Thr Gly Glu His
171 225                     230                     235                     240
174 Val Leu Val Thr Ala Gly Glu Val His Leu Gln Arg Cys Leu Asp Asp
175                 245                     250                     255
178 Leu Lys Glu Arg Phe Ala Lys Ile His Ile Ser Val Ser Glu Pro Ile
179             260                     265                     270
182 Ile Pro Phe Arg Glu Thr Ile Thr Lys Pro Pro Lys Val Asp Met Val
```

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/927,738

DATE: 12/20/2001
TIME: 08:55:03

Input Set : A:\initialseq.ST25.txt
Output Set: N:\CRF3\12192001\I927738.raw

```
183           275                    280                   285
186 Asn Glu Glu Ile Gly Lys Gln Gln Lys Val Ala Val Ile His Gln Met
187       290                    295                   300
190 Lys Glu Asp Gln Ser Lys Ile Pro Glu Gly Ile Gln Val Asp Ser Asp
191 305                    310                   315                   320
194 Gly Leu Ile Thr Ile Thr Thr Pro Asn Lys Leu Ala Thr Leu Ser Val
195                    325                   330                   335
198 Arg Ala Met Pro Leu Pro Glu Glu Val Thr Gln Ile Leu Glu Glu Asn
199       340                    345                   350
202 Ser Asp Leu Ile Arg Ser Met Glu Gln Leu Thr Ser Ser Leu Asn Glu
203       355                    360                   365
206 Gly Glu Asn Thr His Met Ile His Gln Lys Thr Gln Glu Lys Ile Trp
207       370                    375                   380
210 Glu Phe Lys Gly Lys Leu Glu Gln His Leu Thr Gly Arg Arg Trp Arg
211 385                    390                   395                   400
214 Asn Ile Val Asp Gln Ile Trp Ser Phe Gly Pro Arg Lys Cys Gly Pro
215                    405                   410                   415
218 Asn Ile Leu Val Asn Lys Ser Glu Asp Phe Gln Asn Ser Val Trp Thr
219       420                    425                   430
222 Gly Pro Ala Asp Lys Ala Ser Lys Glu Ala Ser Arg Tyr Arg Asp Leu
223       435                    440                   445
226 Gly Asn Ser Ile Val Ser Gly Phe Gln Leu Ala Thr Leu Ser Gly Pro
227       450                    455                   460
230 Met Cys Glu Glu Pro Leu Met Gly Val Cys Phe Val Leu Glu Lys Trp
231 465                    470                   475                   480
234 Asp Leu Ser Lys Phe Glu Glu Gln Gly Ala Ser Asp Leu Ala Lys Glu
235                    485                   490                   495
238 Asp Arg Arg Lys Met Lys Pro Val Leu Val Glu Met Lys Thr Lys Ser
239       500                    505                   510
242 Tyr Lys Met Ala Ala Leu Arg Pro Leu Arg Arg Gly His His Arg Lys
243       515                    520                   525
246 Glu Asn Leu His Ser Leu Thr Ala Met Asp Leu Ser Gln Asp Ser
247       530                    535                   540
250 <210> SEQ ID NO: 3
251 <211> LENGTH: 396
252 <212> TYPE: PRT
253 <213> ORGANISM: Unknown
255 <220> FEATURE:
256 <223> OTHER INFORMATION: Clone S1 + 19
258 <400> SEQUENCE: 3
260 Met Lys Ala Val Lys Ser Glu Arg Glu Arg Gly Ser Arg Arg Arg His
261 1               5                    10                   15
264 Arg Asp Gly Asp Val Val Leu Pro Ala Gly Val Val Val Lys Gln Glu
265             20                    25                   30
268 Arg Leu Ser Pro Glu Val Ala Pro Pro Ala His Arg Arg Pro Asp His
269       35                    40                   45
272 Ser Gly Gly Ser Pro Ser Pro Pro Thr Ser Glu Pro Ala Arg Ser Gly
273       50                    55                   60
276 His Arg Gly Asn Arg Ala Arg Gly Val Ser Arg Ser Pro Pro Lys Lys
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RAW SEQUENCE LISTING   DATE: 12/20/2001
PATENT APPLICATION: US/09/927,738   TIME: 08:55:03

Input Set : **A:\initialseq.ST25.txt**
Output Set: **N:\CRF3\12192001\I927738.raw**

```
277 65                    70                   75                   80
280 Lys Asn Lys Ala Ser Gly Arg Arg Ser Lys Ser Pro Arg Ser Lys Arg
281                 85                   90                   95
284 Asn Arg Ser Pro His His Ser Thr Val Lys Val Lys Gln Glu Arg Glu
285             100                 105                 110
288 Asp His Pro Arg Arg Gly Arg Glu Asp Arg Gln His Arg Glu Pro Ser
289         115                 120                 125
292 Glu Gln Glu His Arg Arg Ala Arg Asn Ser Asp Arg Asp Arg His Arg
293     130                 135                 140
296 Gly His Ser His Gln Arg Arg Thr Ser Asn Glu Arg Pro Gly Ser Gly
297 145                 150                 155                 160
300 Gln Gly Gln Gly Arg Asp Arg Asp Thr Gln Asn Leu Gln Ala Gln Glu
301                 165                 170                 175
304 Glu Glu Arg Glu Phe Tyr Asn Ala Arg Arg Arg Glu His Arg Gln Arg
305             180                 185                 190
308 Asn Asp Val Gly Gly Gly Gly Ser Glu Ser Gln Glu Leu Val Pro Arg
309             195                 200                 205
312 Pro Gly Gly Asn Asn Lys Glu Lys Glu Val Pro Ala Lys Glu Lys Pro
313         210                 215                 220
316 Ser Phe Glu Leu Ser Gly Ala Leu Leu Glu Asp Thr Asn Thr Phe Arg
317 225                 230                 235                 240
320 Gly Val Val Ile Lys Tyr Ser Glu Pro Pro Glu Ala Arg Ile Pro Lys
321             245                 250                 255
324 Lys Arg Trp Arg Leu Tyr Pro Phe Lys Asn Asp Glu Val Leu Pro Val
325             260                 265                 270
328 Met Tyr Ile His Arg Gln Ser Ala Tyr Leu Leu Gly Arg His Arg Arg
329         275                 280                 285
332 Ile Ala Asp Ile Pro Ile Asp His Pro Ser Cys Ser Lys Gln His Ala
333     290              · 295                 300
336 Val Phe Gln Tyr Arg Leu Val Glu Tyr Thr Arg Ala Asp Gly Thr Val
337 305                 310                 315                 320
340 Gly Arg Arg Val Lys Pro Tyr Ile Ile Asp Leu Gly Ser Gly Asn Gly
341             325                 330                 335
344 Thr Phe Leu Asn Asn Lys Arg Ile Glu Pro Gln Arg Tyr Tyr Glu Leu
345         340                 345                 350
348 Lys Glu Lys Asp Val Leu Lys Phe Gly Phe Ser Ser Arg Glu Tyr Val
349         355                 360                 365
352 Leu Leu His Glu Ser Ser Asp Thr Ser Glu Ile Asp Arg Lys Asp Asp
353     370                 375                 380
356 Glu Asp Glu Glu Glu Glu Glu Glu Val Ser Asp Ser
357 385                 390                 395
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360 <210> SEQ ID NO: 4
361 <211> LENGTH: 82
362 <212> TYPE: PRT
363 <213> ORGANISM: Unknown
365 <220> FEATURE:
366 <223> OTHER INFORMATION: Protein Sequence of NIPP-1 domain homologous to SNIP 1
368 <400> SEQUENCE: 4
370 Tyr Leu Phe Gly Arg Asn Pro Asp Leu Cys Asp Phe Thr Ile Asp His

RAW SEQUENCE LISTING
PATENT APPLICATION: US/09/927,738

DATE: 12/20/2001
TIME: 08:55:03

Input Set : A:\initialseq.ST25.txt
Output Set: N:\CRF3\12192001\I927738.raw

```
371 1                    5                    10                   15
374 Gln Ser Cys Ser Arg Val His Ala Ala Leu Val Tyr His Lys His Leu
375             20                  25                  30
378 Lys Arg Val Phe Leu Ile Asp Leu Asn Ser Thr His Gly Thr Phe Leu
379         35                  40                  45
382 Gly His Ile Arg Leu Glu Pro His Lys Pro Gln Gln Ile Pro Ile Asp
383     50                  55                  60
386 Ser Thr Val Ser Phe Gly Ala Ser Thr Arg Ala Tyr Thr Leu Arg Glu
387 65                  70                  75                  80
390 Lys Pro
394 <210> SEQ ID NO: 5
395 <211> LENGTH: 255
396 <212> TYPE: PRT
397 <213> ORGANISM: Unknown
399 <220> FEATURE:
400 <223> OTHER INFORMATION: Clone S1 + 19 Smad binding domain sequence
402 <400> SEQUENCE: 5
404 Arg His Arg Gly His Ser His Gln Arg Arg Thr Ser Asn Glu Arg Pro
405 1                    5                    10                   15
408 Gly Ser Gly Gln Gly Gln Gly Arg Asp Arg Asp Thr Gln Asn Leu Gln
409             20                  25                  30
412 Ala Gln Glu Glu Glu Arg Glu Phe Tyr Asn Ala Arg Arg Arg Glu His
413         35                  40                  45
416 Arg Gln Arg Asn Asp Val Gly Gly Gly Gly Ser Glu Ser Gln Glu Leu
417     50                  55                  60
420 Val Pro Arg Pro Gly Gly Asn Asn Lys Glu Lys Glu Val Pro Ala Lys
421 65                  70                  75                  80
424 Glu Lys Pro Ser Phe Glu Leu Ser Gly Ala Leu Leu Glu Asp Thr Asn
425             85                  90                  95
428 Thr Phe Arg Gly Val Val Ile Lys Tyr Ser Glu Pro Pro Glu Ala Arg
429         100                 105                 110
432 Ile Pro Lys Lys Arg Trp Arg Leu Tyr Pro Phe Lys Asn Asp Glu Val
433         115                 120                 125
436 Leu Pro Val Met Tyr Ile His Arg Gln Ser Ala Tyr Leu Leu Gly Arg
437     130                 135                 140
440 His Arg Arg Ile Ala Asp Ile Pro Ile Asp His Pro Ser Cys Ser Lys
441 145                 150                 155                 160
444 Gln His Ala Val Phe Gln Tyr Arg Leu Val Glu Tyr Thr Arg Ala Asp
445             165                 170                 175
448 Gly Thr Val Gly Arg Arg Val Lys Pro Tyr Ile Ile Asp Leu Gly Ser
449         180                 185                 190
452 Gly Asn Gly Thr Phe Leu Asn Asn Lys Arg Ile Glu Pro Gln Arg Tyr
453         195                 200                 205
456 Tyr Glu Leu Lys Glu Lys Asp Val Leu Lys Phe Gly Phe Ser Ser Arg
457     210                 215                 220
460 Glu Tyr Val Leu Leu His Glu Ser Ser Asp Thr Ser Glu Ile Asp Arg
461 225                 230                 235                 240
464 Lys Asp Asp Glu Asp Glu Glu Glu Glu Glu Val Ser Asp Ser
465             245                 250                 255
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Use of n and/or Xaa has been detected in the Sequence Listing.
Review the Sequence Listing to insure a corresponding
explanation is presented in the <220> to <223> fields of
each sequence using n or Xaa.

VERIFICATION SUMMARY   DATE: 12/20/2001
PATENT APPLICATION: **US/09/927,738**   TIME: 08:55:04

Input Set : **A:\initialseq.ST25.txt**
Output Set: **N:\CRF3\12192001\I927738.raw**

L:9 M:270 C: Current Application Number differs, Replaced Current Application Number
L:832 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:10
L:931 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:11
L:1240 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:16